STATE OF SOUTH CAROLINA) THE DEPARTMENT OF HEALTH
COUNTY OF LEXINGTON) AND ENVIRONMENTAL CONTROL

IN RE: TIN PRODUCTS, INC.

EMERGENCY ORDER

The Department of Health and Environmental Control ("DHEC") hereby finds as follows:

1. Tin Products, Inc. ("Tin Products") owns and operates a manufacturing facility located at 1000 Bonhomme Richard Drive in Lexington County, South Carolina.

2. Tin Products manufactures and uses a number of products that include organic or inorganic tin compounds, sometimes referred to herein as organotins. Tin Products uses, produces and stores other hazardous and toxic materials in the course of its manufacturing processes.

3. On June 6, 2000, DHEC issued an Administrative Order against Tin Products (Administrative Order 00-112-W, HW, 00-12-HW, W) relating to Tin Products' discharge of organotins into the environment in February 2000 and the damage that resulted from the release. The Administrative Order is hereby specifically incorporated into this Emergency Order and is attached as Exhibit A.

4. In May 1999 a fire/explosion occurred at Tin Products. Upon information and belief, the incident occurred in the tetrabutyltin process area. Also upon information and belief, liquid from a valve, which was at the bottom of one of the tanks in that area, leaked onto water and

exploded. Tin Products failed to report this event to DHEC.

5. On January 23, 2001, DHEC conducted a multimedia inspection of the facilities at Tin Products. DHEC staff learned that releases had occurred and that numerous permit violations had occurred, specifically as follows:

a. Tin Products routinely stores its process wastewater in a secondary containment area, which is not acceptable, because a secondary area should only be used for rainwater or spills (the area is marked on Exhibit B, a site plan of the facility). This is a violation of 24A SC Code Reg. 61-62.68.69;

b. At the time of the inspection, the secondary containment area was flooded with liquid that did not appear to be entirely rainwater, because of the milky, greenish color of the liquid. Sampling confirmed the presence of organotins in the liquid. Additional analytical results will be forthcoming ;

c. At the time of the inspection the truck loading area was also flooded with the same milky greenish colored liquid. Tin Products had no controls in place to ensure that trucks leaving the area did not track the liquid into the environment;

d. An unpermitted release of hydrochloric acid vapor (this is marked on the site plan, Exhibit B) occurred in the stannic chloride production area and was ongoing during the inspection. The acid had been released by material leaking from the process and reacting with the standing water in the containment area. The alarms that should have sounded did not detect the release. This release violated 24A SC Code Ann. Reg 61-62.4;

e. An additional unauthorized release of liquid from the containment area around the painting and storage shed occurred because of a crack in the wall of the containment area.

The liquid traveled a short distance and disbursed into the ground, threatening the groundwater because of the sandy nature of the soil. Organotins were detected in the water and soils impacted by this release (as shown on the site plan, Exhibit B). Additional analytical results are forthcoming;

f. The inspection indicated that the tetrabutyltin, tetraoctyltin (TBT/TOT) process was not constructed as outlined under construction permits 1560-0101-CE-CF-CG-CH and the construction permit application submitted by Tin Products;

g. Tin Products used two processes (the tri-n-butyl aluminum/tri-n-octyl aluminum sparging vessel and emergency spillage and the drum filling operation) that should have been permitted and which were not permitted.

6. On February 7, 2001, a fire occurred at Tin Products in the tetrabutyltin, tetraoctyltin portion of the manufacturing facility (TBT/TOT). The location of the fire is marked on the site plan, Exhibit B. An employee was injured in the fire. The cause of the fire is still undetermined, but the source for the fire was the alkyl aluminum scrubber tank, which contained mineral oil and alkyl aluminums, either tri-n-butyl aluminum and/or tri-n-octyl aluminum. Alkyl aluminums are pyrophoric, meaning that they will ignite on contact with air or water. The fire caused the complete meltdown of a 3000-gallon wastewater storage tank which contained, among other contaminants, organotins, dibutylether and tin chlorides. DHEC inspectors observed a trail of liquid adjacent to the tank which indicates the possibility that the contaminants were released into the environment. If the fire had occurred while the area was flooded, the fire would have been worse.

7. The fire also caused an 18,000-gallon process water tank to leak. The tank previously

contained organotins and, because of the way Tin Products captured and reused its process wastewater, at the time of the fire, it was likely that the process water may have contained organotins and other manufacturing waste products from the chemical manufacturing operation.

8. The pooled liquid outside the containment area was analyzed and found to have a pH of 5.5, indicating acidity. This result indicates that contaminated liquid must have left containment. Water service to the area is in the pH level of 7. There are no known natural processes which could lower the pH of the water from 7 to 5.5.

9. During the site review on February 7, 2001, DHEC staff discovered a 55-gallon drum in the waste storage area bulged to the extreme on the top and the bottom of the drum, which was labeled to contain mineral oil and was filled on January 18, 2001. Mineral oil alone would not cause a steel drum to bulge unless subjected to extremely high temperatures and no such exposure was indicated on the outside of the drum. The bulge is indicative of an uncontrolled reaction and could have occurred from a mixture of mineral oil and alkyl aluminums.

10. The TBT/TOT manufacturing area is connected to the stannic chloride manufacturing area by above-ground piping.

11. The presence and continued use of alkyl aluminum creates the potential for additional fires.

12. Tin Products is responsible for safe handling, storage and use of pyrophoric materials including alkyl aluminums, therefore, Tin Products should have known of the propensity of alkyl aluminums and mineral oil to self ignite and should have acted to prevent ignition.

13. Tin Products' discharges of chemicals to the environment without a permit constitute violations of the Pollution Control Act, specifically, S.C. Code Ann. § 48-1-90 (a) and (b) (Supp.

1999).

14. DHEC has the authority and responsibility to abate, control, and prevent pollution and to abate nuisances dangerous to the public life and health, and to make orders and rules to meet emergencies not provided for by general regulations, to suppress nuisances dangerous to the public health and other danger to the public health, and to require any actions necessary to protect the public health and property in an emergency. S.C. Code Ann. §§ 44-1-110, 44-1-140, 44-56-50 (Supp. 1999), 48-1-20, 48-1-280, and 48-1-290.

15. An emergency exists at Tin Products because of the hazardous nature of the chemicals involved and Tin Products' history of uncontrolled releases and fires. Continued operation of the Tin Products facility would constitute a threat to the environment and to the public health.

NOW THEREFORE IT IS ORDERED that Tin Products must:

1) immediately cease any unauthorized or unpermitted discharges and provide for continued control of any storm or waste water generated on site;

2) immediately begin a safe and orderly shutdown of all manufacturing processes; this shall include, but not be limited to, prompt completion of all batch processes; not starting any new batch processes; flushing any continuous process lines; and removing or safely storing all potentially dangerous chemicals (including addressing the bulging drum referenced in paragraph 9);

3) not move potentially dangerous chemicals or processes to Cardinal Companies, L.P. or any entity related to Cardinal;

4) within 48 hours, provide to the DHEC on-site inspector a copy of the procedure and timetable for the shutdown;

5) by 5:00 p.m. Monday, submit to the DHEC on-site inspector a list of all chemicals in Tin Products' inventory which, alone or in combination with other chemicals in the inventory, have the potential to harm the environment or the public's health in the event of an unpermitted or uncontrolled release; and a description of all precautions to be performed by Tin Products to insure the safety of these chemicals during the implementation of the provisions of this order;

6) Tin Products shall not restart any manufacturing process until authorized by DHEC.

IT IS FURTHER ORDERED that nothing in this Order shall be construed to limit DHEC's power to institute additional orders or enforcement actions, including imposition of civil penalties, for any past or future violations of applicable statutes and regulations, or permits or authorizations issued to Tin Products.

AND IT IS SO ORDERED.

Douglas E. Bryant
Commissioner

February 7, 2001
Columbia, S.C.